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Job No.: CECTC/BBMP/KRIDL/W.No.14/GSB-1/AL/2016-17 Date : 09.12.2016

ATTERBERG LIMITS TEST FOR GSB (COARSE GRADED)
IS : 2720 (Part - 5)

Client : **Asst. Executive Engineer,** Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, BBMP, Bangalore.

Name of work : Asphalting Kirloskar layout main road Bagalagunte in Ward No.14, BBMP, Bangalore.

Date of Testing : 09.12.2016

As per MORTH Table : 400-01

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	20.80	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

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2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

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Job No.: CECTC/BBMP/KRIDL/W.No.14/WMM/GR/2016-17 Date : 19.12.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Dasarahalli Sub Division, BBMP, Bangalore.
Agency : **Technical Manager,** KRIDL, BBMP, Bangalore.
Name of Work : Asphalting Kirloskar layout main road Bagalagunte in Ward No.14, BBMP, Bangalore.
Date of Testing : 19.12.2016
Material : Wet Mix Macadam
Sample Location : WMM Mix Plant Oven Dry Wt (gm): **12243**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	458	458	3.7	96.3	95-100
22.4	4215	4673	38.2	61.8	60-80
11.2	2380	7053	57.6	42.4	40-60
4.75	1650	8703	71.1	28.9	25-40
2.36	1320	10023	81.9	18.1	15-30
0.600	1135	11158	91.1	8.9	8-22
0.075	775	11933	97.5	2.5	0-8

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Job No.: CECTC/BBMP/KRIDL/W.No.14/WMM/Shape/2016-17 19.12.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, BBMP, Bangalore.
Name of Work	Asphalting Kirloskar layout main road Bagalagunte in Ward No.14, BBMP, Bangalore.
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Sample ID	WMM Layer
Date of Testing	19.12.2016

Result : Flakiness Index = **11.00%**

Elongation Index = **13.30%**

Result : Combined Flakiness & Elongation index 24.30%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CECTC/BBMP/KRIDL/W.No.14/BM/Gr/-2016-17 02.01.2017

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX
AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, BBMP, Bangalore.
NAME OF THE WORK	Asphalting Kirloskar layout main road Bagalagunte in Ward No.14, BBMP, Bangalore.
SAMPLE I/D	Main road Bagalagunte in Ward No.14
DATE OF TESTING	02.01.2017

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	481.5
3. Weight of Asphalt and Mineral matter Extracted,	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	18.50
7. Bitumen content in %	3.60	3.70
8. Average	3.65	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Trail 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	35	7.26	7.26	92.74	90-100
13.2	156	32.37	39.63	60.37	56-88
4.75	143	29.67	69.29	30.71	16-36
2.36	64	13.28	82.57	17.43	4-19
0.3	39.8	8.26	90.83	9.17	2-10
0.075	16.2	3.36	94.19	5.81	0-8

SIEVE SIZE	Trail 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	32.5	6.50	6.50	93.50	90-100
13.2	138	27.60	34.10	65.90	56-88
4.75	165	33.00	67.10	32.90	16-36
2.36	88.5	17.70	84.80	15.20	4-19
0.3	28.6	5.72	90.52	9.48	2-10
0.075	12.5	2.50	93.02	6.98	0-8

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Job No.: CECTC/BBMP/KRIDL/W.No.14/BC/Sp.Gr/2016-17 04.01.2017

Specific Gravity And Water Absorption Test
IS: 2386 Part III

Client	**Asst. Executive Engineer,** Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, BBMP, Bangalore.
Name of the Work	Asphalting Kirloskar layout main road Bagalagunte in Ward No.14, BBMP, Bangalore.
Type of Mix	Bituminous Concrete
Date of Testing	04.01.2017

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2045	1983	1996	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1290	1228	1241	
4	Weight of saturated surface dry aggregate in air	W_3 g	2032	2015	2015	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	742	787	774	
6	Weight of oven dried aggregate	W_4 g	2016	1998	2011	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.717	2.539	2.598	2.618
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.777	2.595	2.612	2.661
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.79%	0.85%	0.20%	0.61%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

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Job No.: CECTC/BBMP/KRIDL/W.No.14/BC/Sta/2016-17 04.01.2017

TEST REPORT ON STABILITY OF MIX

Client	:	**Asst. Executive Engineer,** Dasarahalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager,** KRIDL, BBMP, Bangalore.
Name of the Work	:	Asphalting Kirloskar layout main road Bagalagunte in Ward No.14, BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	04.01.2017

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.60	9.95	9 Kn (min)
2	Marshal flow, mm	2.10	3.15	2 – 4
3	Percent air voids in Mineral Aggregate	13.50	13.80	13 – 15
4	Voids in Compacted Mix	5.10	5.80	3 – 6
5	Percent Voids filled with Bitumen	65.80	71.25	65 - 75
6	Density, g/cc	2.25	2.26	--

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